

GUIDELINE C-6
(formerly 14-07)

**Handling, Transportation and Disposal
of Asbestos Waste in Bulk**

Legislative Authority:

*Environmental Protection Act, RSO 1990, Section 27
Ontario Regulation 347, Section 17*

Responsible Director:

Director, Program Development Branch

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SYNOPSIS

The primary purpose of this guideline is to provide basic standards for the assessment of vehicles, equipment and procedures used for the collection, transportation and disposal of asbestos waste in bulk. The guideline is intended for use by operators of bulk asbestos waste handling and transportation systems, and by Ministry staff during their review and assessment of Certificate of Approval applications for bulk asbestos waste systems and during their monitoring of such systems.

1.0 Introduction

O. Regulation 347 permits the disposal of asbestos waste in any landfill site approved for the disposal of municipal waste. In addition to allowing this disposal method, the Regulation imposes standards for waste handling, packaging, transportation, vehicles and disposal sites.

2.0 Definition

Asbestos waste in bulk:

Asbestos waste that is handled in reusable rigid containers that are part of the collection vehicle and that, when lined, use a single impermeable liner.

3.0 Purpose

This guideline provides a consistent basis for the review and operation of waste management systems that handle asbestos waste in bulk.

4.0 Application

This guideline is intended for use by equipment owners as a basis for the operation of bulk handling systems. In addition, it is for use by Approvals Branch and Regional Operations staff during their review of applications for Certificates of Approval and during the monitoring of bulk asbestos handling systems. O. Regulation 347 and Section 27 of the *Environmental Protection Act* require Ministry approval of these systems. Alternative waste management techniques may be used when they are consistent with the overall intent of the guidelines.

5.0 Design and Operational Standards

All applicable provisions for the management of asbestos waste presented in O. Regulation 347 must be followed, including the following provisions:

- (a) Asbestos waste in bulk must be transported by means of a waste management system operating under a Certificate of Approval or Provisional Certificate of Approval that specifically authorizes the transportation of asbestos waste in bulk.
- (b) Asbestos waste should be transported directly to a landfill site at which the operator has been informed in advance of the quantity of the waste and the approximate time of arrival.

The following specific requirements deal with: asbestos waste transported using an industrial vacuum loader; and asbestos waste transported in bulk using a lugger-box type container.

5.1 Asbestos Waste Transported Using an Industrial Vacuum Loader

Most asbestos wastes are generated when insulation or fireproofing materials are removed from equipment or buildings. These wastes can be removed manually by scraping or brushing, or by using high-pressure water. Removal of asbestos by any of these methods usually involves the use of water to lower the friability of asbestos and minimize the amount of fibres which may become airborne. Surfactants can be added to the water to improve wetting and increase penetration.

Industrial vacuum loaders may be used to collect asbestos removed by any of these methods. In general, industrial vacuum loaders consist of a blower preceded by particulate removal equipment and a debris or waste collection box. The vacuum induced by the blower is used to draw the asbestos waste into the debris box through a hose/boom arrangement.

The following standards apply to the design and operation of vacuum systems that handle asbestos in bulk:

- (a) All asbestos waste shall be wetted either during or prior to collection.
- (b) All vacuum systems shall be equipped with particulate removal equipment to minimize asbestos emissions from the blower exhaust. In most cases, asbestos emissions from vacuum systems shall not exceed the one-half hour average

guideline of 5 $\mu\text{g}/\text{m}^3$ for total asbestos at the point-of-impingement.

To enable operators to interpret this one-half hour average guideline, (Provisional) Certificates of Approval will include a condition specifying the minimum distance required between the vacuum unit and the nearest receptor. A provision will also be included in the condition to give the Regional Director the discretion to set aside this minimum distance where it can be shown to be either unnecessarily restrictive or not restrictive enough. In those cases where the minimum distance cannot be maintained, changing the work location of the vacuum unit or cordoning-off the work area shall be considered.

Emission data for the unit shall be submitted with the application for a Certificate of Approval under Section 27 of the *EP Act*.

- (c) All equipment shall be operated and maintained in accordance with the manufacturer's specifications. These specifications shall be submitted to the Ministry for review at the time application is made under Section 27 of the *EP Act*.
- (d) Emission control equipment shall not be bypassed. In the event of equipment malfunction, asbestos removal operations shall be immediately terminated. The local District Office of the Ministry shall be notified, promptly, of any emissions to the atmosphere of asbestos fibres that may exceed the Ministry guideline.
- (e) Asbestos shall be discharged directly from the collection/transportation vehicle to a depression that has been specifically prepared at the landfill site to receive the wetted asbestos waste. Care shall be taken to minimize any spillage outside of the prepared depression.
- (f) To minimize spillage and splashing of wet asbestos, a chute shall be provided for discharging asbestos waste from the vehicle into the depression.
- (g) Any large quantities of dry asbestos wastes found in the vehicle during the disposal operation shall be immediately wetted in the vehicle to minimize the emission of fibres to the atmosphere.
- (h) The operator shall wear protective equipment while wetting asbestos waste as specified in Section 5.1(g) (above).

- (i) At the end of the disposal operation, the exterior of the truck and the chute shall be thoroughly washed, if required, to remove any spillage or splashback resulting from the waste discharge. All washwater must be directed to the prepared depression.
- (j) All filter bags, included as part of the particulate removal equipment, shall be disposed of at the site with the asbestos waste to ensure that contaminated bags are not reused for other vacuum service.
- (k) Following the disposal and vehicle cleaning operation, a 125 cm layer of garbage or other cover material shall be promptly placed on the asbestos waste to avoid direct contact with landfill equipment.

Sufficient absorbent material should be applied to absorb free liquid before the placement of the 125 cm layer of cover material. Since the intent is to provide a stable base for site compaction equipment, materials such as earth and sand are acceptable.

5.2 Asbestos Waste Transported in Bulk using a "Lugger-Box" Type Container

Asbestos wastes are also generated by industrial operations, such as the manufacture of friction pads for automobile and truck brake shoes. Asbestos wastes from these operations can include off-specification product, floor sweepings and fibre collected from baghouses or other air cleaning devices. In general, off-specification products and floor sweepings should be handled in polyethylene bags, in accordance with requirements found in O. Regulation 347. Bulk asbestos waste generated from baghouses or other particulate removal equipment may be handled with a "lugger-box" type container. The following additional standards shall apply for these systems:

- (a) The lugger-box container shall be lined with a polyethylene bag that is at least 6/1000" and that is sufficiently durable to ensure that punctures, tears or leaks do not develop during handling, transportation or disposal. When the loading operation is completed, the polyethylene bag shall be securely closed and sealed. Air displaced from these bags by dry asbestos during filling, shall be vented back to control equipment to minimize fibre emissions.
- (b) In those cases where the asbestos wastes have been pelletized or otherwise prepared to eliminate friability and the potential for emission of fibres to the atmosphere, a liner that can be overlapped and sealed to cover the

asbestos may be used in place of polyethylene bags. The liner shall ensure that there is no contact between the pelletized asbestos and the lugger-box. The liner must be at least 6/1000" and sufficiently durable to ensure that punctures or tears do not develop during handling, transportation and disposal.

- (c) To minimize the freezing of bags and liners to containers during the winter (that may result in tearing during unloading), lugger-boxes shall be covered or otherwise protected against precipitation.
- (d) Lugger-boxes shall be covered during transportation with a suitable tarpaulin or net to ensure that the load is properly secured.
- (e) Asbestos shall be discharged directly from the collection/transportation vehicle to a depression that has been specifically prepared at the landfill site to receive the asbestos waste. Care shall be taken to minimize any spillage outside of the prepared depression.
- (f) The polyethylene liner or bag shall be disposed of in the landfill with the contained asbestos waste.
- (g) To minimize the breaking of bags referred to in Section 5.2 (a) above, a chute shall be provided, as required, to slide the waste into the depression in the landfill site.
- (h) The empty lugger-box and the exterior of the truck shall be thoroughly washed, as required, to remove asbestos waste residues. All washwater must be directed to the prepared depression.
- (i) Following the disposal and vehicle cleaning operation, a 125 cm layer of garbage or other cover material shall be promptly placed over the asbestos waste to avoid direct contact with landfill equipment.

Sufficient material shall be applied to absorb free liquid before the placement of the 125 cm layer of cover material. Since the intent is to provide a stable base for site compaction equipment, materials such as earth and sand are acceptable.